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STN Karlsruhe

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ACCESSION NUMBER: 2000-648385 [63] WPIDS
DOC. NO. CPI: C2000-196222
TITLE: Microorganism with deregulated cysteine metabolism, useful for high-level production of cysteine and its derivatives, has increased activity of the CysB transcription regulator.
DERWENT CLASS: B05 D16 E16
INVENTOR(S): MAIER, T; WINTERHALTER, C
PATENT ASSIGNEE(S): (CONE) CONSORTIUM ELEKTROCHEM IND GMBH
COUNTRY COUNT: 34
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
DE 19949579	C1	20001116	(200063)*		11	C12N001-00 <--
WO 2001027307	A1	20010419	(200124)	GE		C12P013-12
RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE						
W: CA CN HU JP KR PL RU SK US						
EP 1220940	A1	20020710	(200253)	GE		C12P013-12
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI						
SK 2002000497	A3	20020910	(200274)			C12P013-12
KR 2002059620	A	20020713	(200306)			C12N001-20
EP 1220940	B1	20030129	(200309)	GE		C12P013-12
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI						
CN 1379823	A	20021113	(200317)			C12P013-12
DE 50001193	G	20030306	(200319)			C12P013-12
JP 2003511086	W	20030325	(200330)		32	C12N015-09

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
DE 19949579	C1	DE 1999-19949579	19991014
WO 2001027307	A1	WO 2000-EP9720	20001005
EP 1220940	A1	EP 2000-969413	20001005
		WO 2000-EP9720	20001005
SK 2002000497	A3	WO 2000-EP9720	20001005
		SK 2002-497	20001005
KR 2002059620	A	KR 2002-704742	20020412
EP 1220940	B1	EP 2000-969413	20001005
		WO 2000-EP9720	20001005
CN 1379823	A	CN 2000-814272	20001005
DE 50001193	G	DE 2000-501193	20001005
		EP 2000-969413	20001005
		WO 2000-EP9720	20001005
JP 2003511086	W	WO 2000-EP9720	20001005
		JP 2001-530510	20001005

FILING DETAILS:

PATENT NO	KIND		PATENT NO
EP 1220940	A1	Based on	WO 200127307
SK 2002000497	A3	Based on	WO 200127307
EP 1220940	B1	Based on	WO 200127307
DE 50001193	G	Based on	EP 1220940
		Based on	WO 200127307

JP 2003511086 W Based on WO 200127307

PRIORITY APPLN. INFO: DE 1999-19949579 19991014
INT. PATENT CLASSIF.:
MAIN: C12N001-00; C12N001-20; C12N015-09; C12P013-12
SECONDARY: C12N001-21; C12N009-10; C12N015-54; C12N015-63; C12N015-67; C12N015-70
INDEX: C12N001-21; C12P013-12; C12R001:19; C12R001:19

BASIC ABSTRACT:

DE 19949579 C UPAB: 20001205

NOVELTY - Microorganism (A) suitable for fermentative production of L-Cys and its derivatives has a deregulated Cys metabolism that is not related to altered CysB activity and has increased CysB activity which provides a regulatory pattern typical of that for wild-type CysB.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for:

(1) method for producing (A);

(2) method for producing L-Cys and its derivatives by fermentation of (A);

(3) plasmid containing the elements required for deregulation of Cys metabolism that does not change CysB activity, and a cysB gene under control of a promoter; and

(4) method for overexpression of metabolites (II) by overexpressing a regulatory gene of the LysR-Trp transcription regulator family.

USE - (A) are used for fermentative production of L-Cys (useful as food additive, particularly in baked goods; as cosmetic ingredient; and as starting material for pharmaceuticals) e.g. N-acetyl-Cys or S-carboxymethyl-Cys) or its derivatives (e.g. cystine, methionine, glutathione, biotin, thiazolidines, thiamine, lipoic acid or coenzyme A). More generally any transcription factor of the LysR-Trp family (to which CysB belongs) can be used to induce overexpression of metabolites.

ADVANTAGE - (A) secretes L-Cys and its derivatives in higher yield than cells without increased CysB activity.

Dwg.0/2

TECHNOLGY FOCUS:

DE 19949579 C1 UPTX: 20001205

TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Microorganisms: Increased cysB activity is provided by increased expression of homologous or heterologous cysB genes. (A) is particularly an Escherichia coli strain in which the wild-type cysB gene is overexpressed.

Preparation: A microorganism with deregulated Cys metabolism in modified either to increase the copy number or the expression (e.g. by promoter exchange) of the wild-type cysB gene or of a cysB gene that has the wild-type regulation pattern. Especially the microorganism is transformed with the plasmid of (3), particularly a high copy number plasmid containing cysB. Alternatively, extra copies of cysB are integrated into the chromosome by homologous recombination.

FILE SEGMENT: CPI
FIELD AVAILABILITY: AB; DCN
MANUAL CODES: CPI: B04-E08; B04-F10A3E; B10-B02D; B11-A01; D05-C01; D05-H12D5; D05-H12E; D05-H14A1; D05-H17A6; D08-B; E10-B02D1; E11-M